# PEO C4I and Space PMW 165

## Interfacing IT-21 and BLII with NMCI
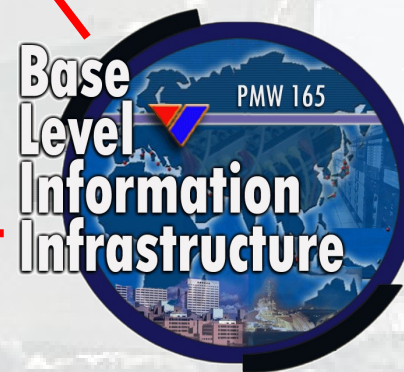
**Navy Marine Corps Intranet Industry Symposium**

**June 17-19, 2003**

# Tim Smith

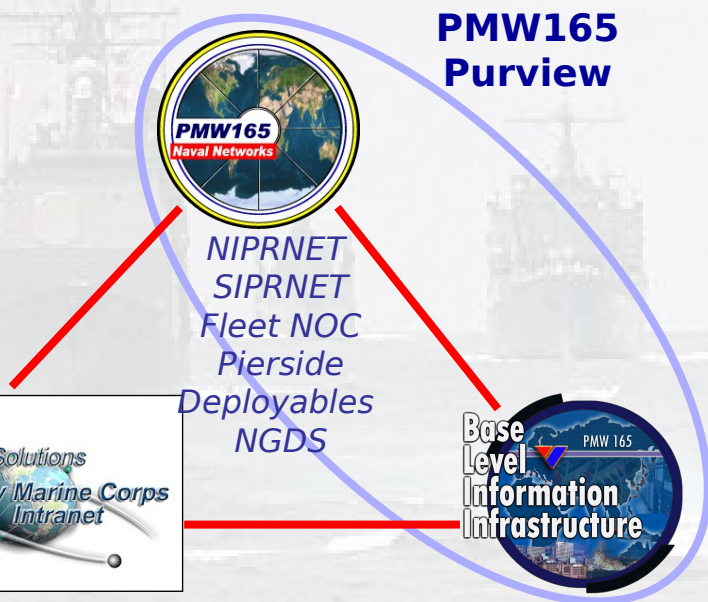**Program Manager
Naval Networks**

# The Navy's IT Enterprise

# Extent of our Enterprise

## We support

- 80,000 clients
- ~300 ships
- 20 Major Fleet Concentration Areas

**PMW165 Purview**

NIPRNET
SIPRNET
Fleet NOC
Pierside
Deployables
NGDS

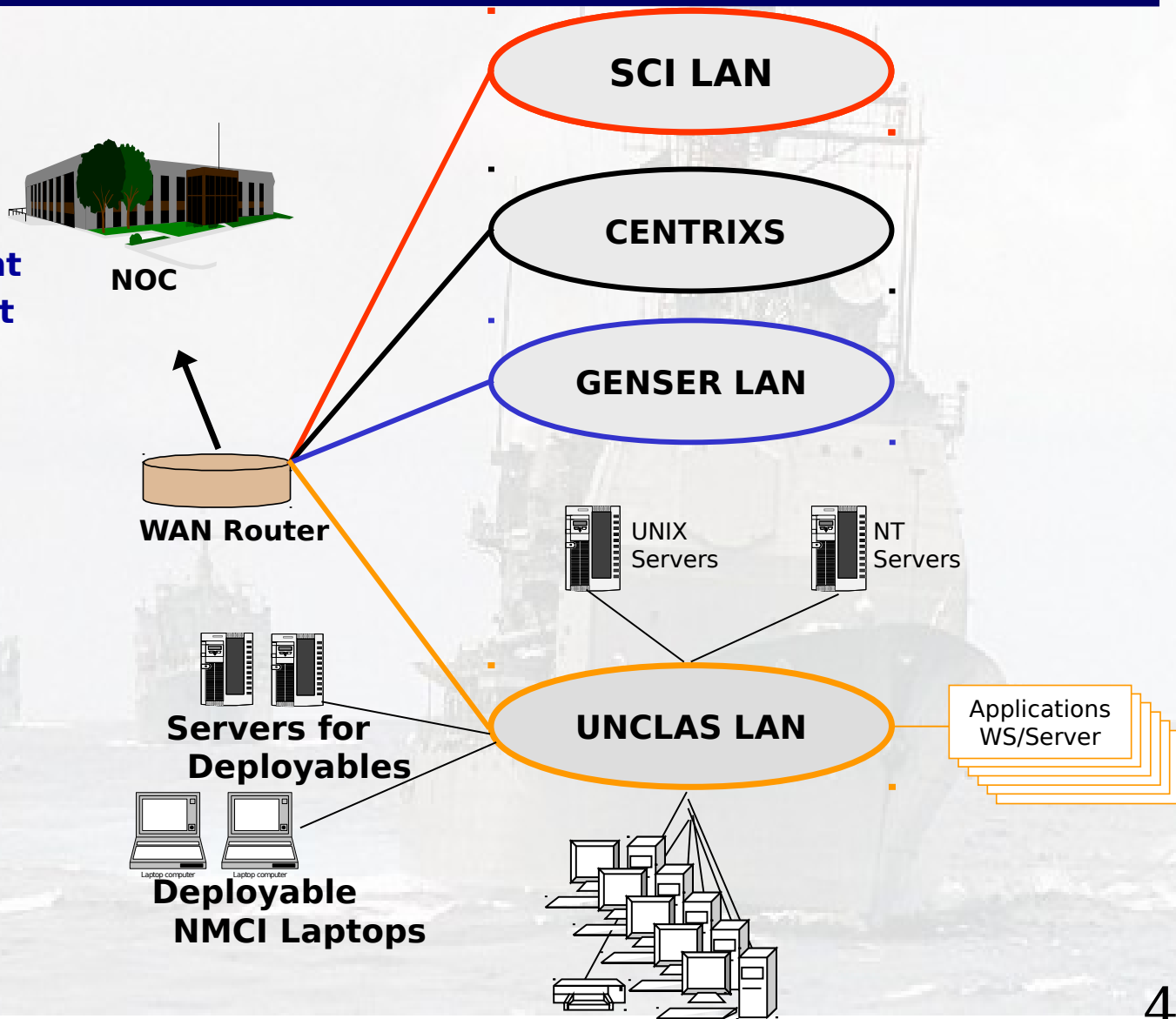|  | Clients |
|---|---|
| IT-21 Afloat | 50,000 |
| BLII | 30,000 |
| TOTAL | 80,000 |

# IT-21 Afloat

**Diverse Services**

- E-Mail
- Web Browsing
- Network Management
- Account Management
- Directory Services
- Print Services
- File Transfer
- Chat
- Office Automation
- Security
- Video TELCON

**NOC**

**WAN Router**

**SCI LAN**

**CENTRIXS**

**GENSER LAN**

UNIX Servers

NT Servers

**Servers for Deployables**

**UNCLAS LAN**

Applications WS/Server

Laptop computer   Laptop computer

**Deployable NMCI Laptops**

4

# BLII Work Sites



OCONUS Data

Telephony

Force Protection (Piers)
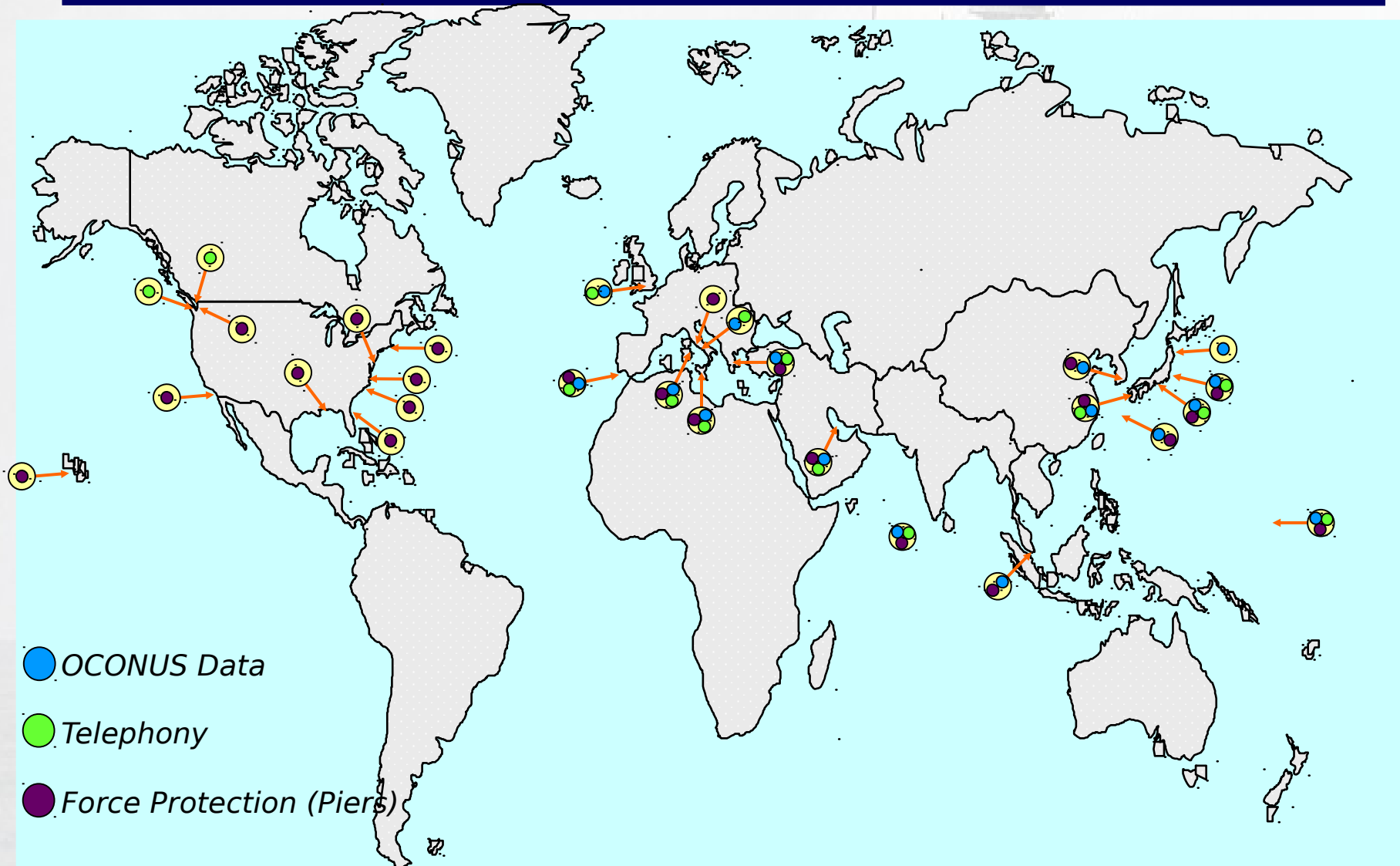
# IT21 is a Dynamic Environment

- ***Framing the picture***
  - *24x7 service requirements – online, anytime, anywhere*
  - *User has ability to customize at the desktop*
  - *Multiple workstation users*
  - *Complex security and storage requirements*
  - *Limited data reach-back access/limited bandwidth*
  - *Crossing domains*
  - *User migration/Identity management*
  - *Multiple policies and methodologies*
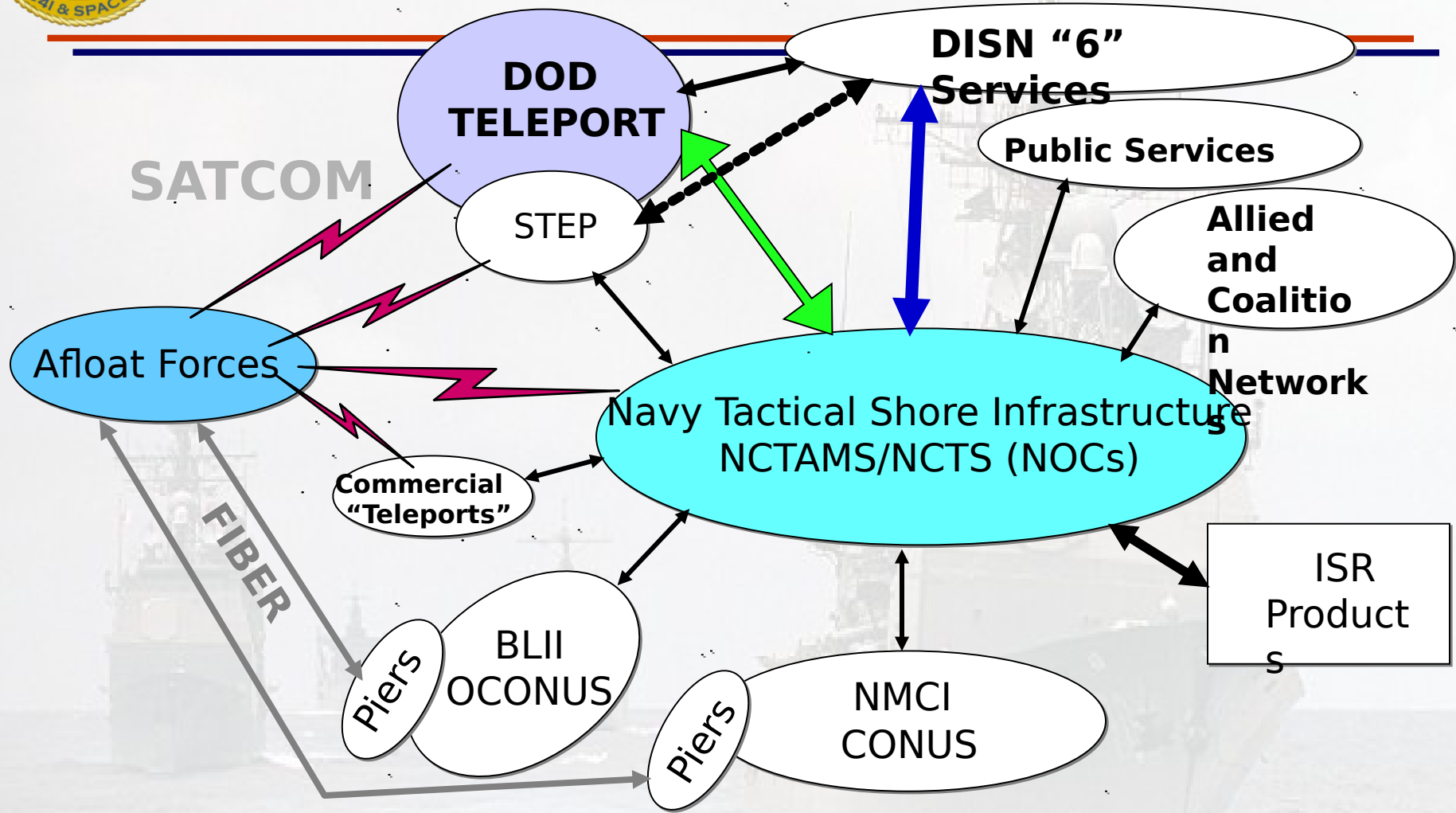  - *Enterprise-wide software upgrades take time*

# Manage the Interfaces
## *(and Policies)*

- ***Security***
  - *Firewalls, virus protection, intrusion detection*
- ***Data migration***
- ***Information reach-back***
- ***Identity management***
- ***Application integration***
- ***Basic IT services***
  - *Email, chat, web, DNS, print, and file*

# NCTAMS Shore and Afloat Interfaces

**DOD TELEPORT**

**DISN "6" Services**

**Public Services**

SATCOM

STEP

**Allied and Coalition Network**

Afloat Forces

Navy Tactical Shore Infrastructure
NCTAMS/NCTS (NOCs)

Commercial "Teleports"

ISR Products

FIBER

Piers

BLII OCONUS

Piers

NMCI CONUS

NCTAMS/NCTS provide services
To Naval, Joint, Allied and Coalition users

BLII = Base Level Information Infrastructure
ISR = Intelligence, Surveillance & Reconnaissance
NMCI = Navy Marine Corps Intranet
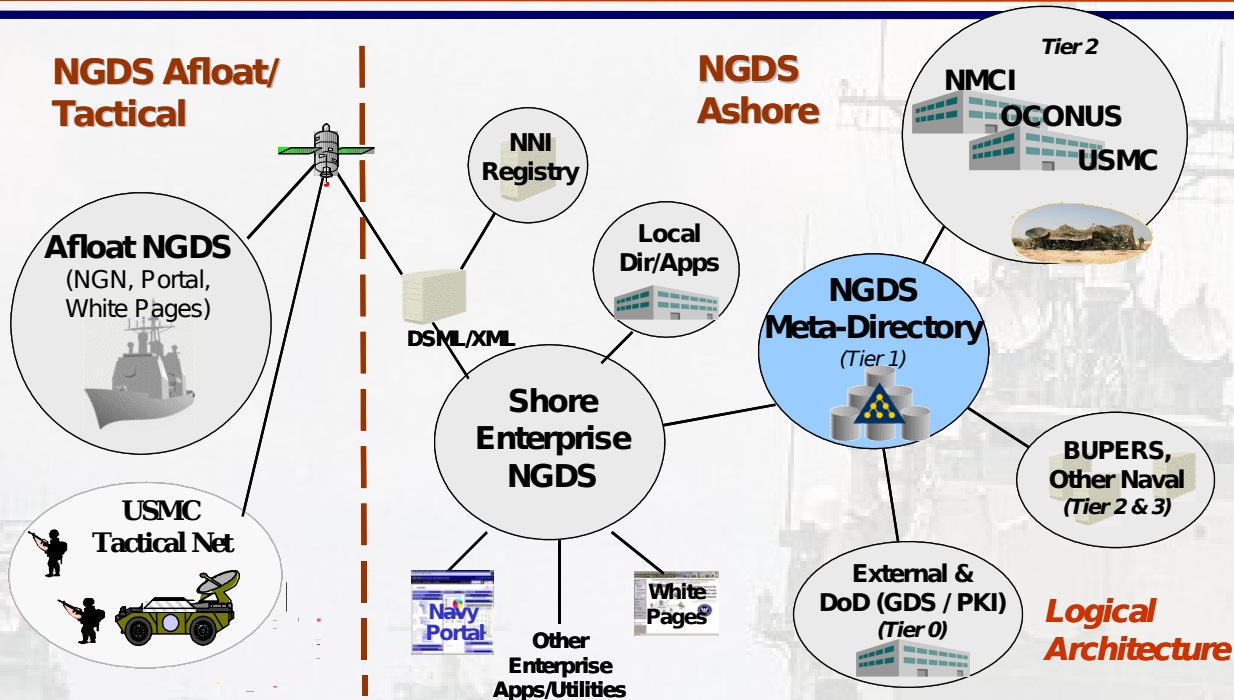NOC = Network Operations Center
STEP = Standardized Tactical Entry Point

# Backup

# NGDS Architecture



- *IT-21, MCTN, BLII, and NMCI will input into an NGDS Meta-Directory creating a single superset of directory data*
  - *Enables enterprise business rules to control data sharing*
- *Domains have their own tiered directories that are subordinate that access required information from other domains*
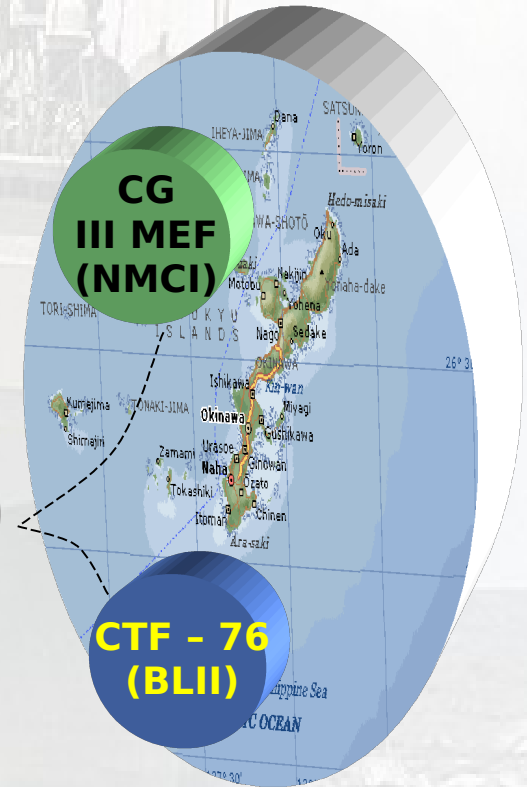
# Deployables in BLII OCONUS

**Amphibious Objective Area**

**KOREA**

**USS ESSEX (LHD-2)**
**(IT-21)**

**CG III MEF (NMCI)**

**CTF - 76 (BLII)**
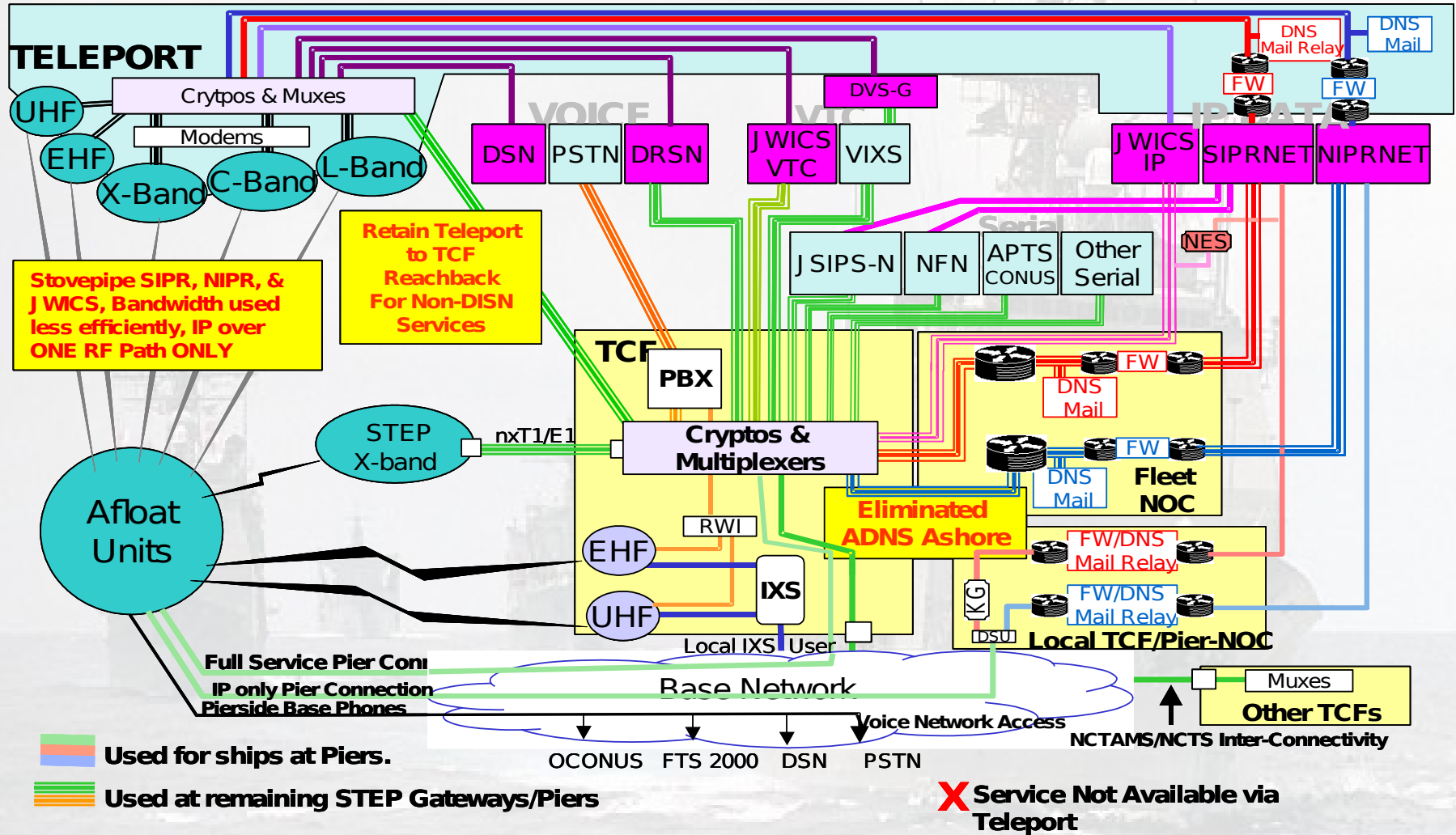
**OKINAWA**

# Teleport Point Design

## Access DISN IP, Voice and VTC Services at Teleport and non-DISN Services (POTS, VIXS, etc) via Navy TCF

**TELEPORT**

- UHF
- EHF
- X-Band
- C-Band
- L-Band
- Crytpos & Muxes
- Modems

**VOICE**

- DSN
- PSTN
- DRSN

**VTC**

- JWICS VTC
- VIXS
- DVS-G

**IP DATA**

- JWICS IP
- SIPRNET
- NIPRNET
- DNS Mail Relay
- DNS Mail
- FW
- FW

**Retain Teleport to TCF Reachback For Non-DISN Services**

**Stovepipe SIPR, NIPR, & JWICS, Bandwidth used less efficiently, IP over ONE RF Path ONLY**

**Serial**

- JSIPS-N
- NFN
- APTS CONUS
- Other Serial
- NES

**TCF**

- PBX
- STEP X-band
- nxT1/E1
- Cryptos & Multiplexers
- RWI
- EHF
- UHF
- IXS
- Local IXS User

**Afloat Units**

**Eliminated ADNS Ashore**

- DNS Mail
- FW
- DNS Mail
- FW
- Fleet NOC
- FW/DNS Mail Relay
- FW/DNS Mail Relay
- KG
- DSU
- **Local TCF/Pier-NOC**

**Full Service Pier Conn**
**IP only Pier Connection**
**Pierside Base Phones**

**Base Network**

**Voice Network Access**

- OCONUS
- FTS 2000
- DSN
- PSTN

**Muxes**

**Other TCFs**

**NCTAMS/NCTS Inter-Connectivity**

**Used for ships at Piers.**

**Used at remaining STEP Gateways/Piers**

**X Service Not Available via Teleport**

1

# NOC Interface CONOP

NMCI — NAVY MARINE CORPS INTRANET

SIPRNET (redistributed via
COINS and vBNS+ from NOCs)

| Type 1 Crypto |
| "RED" Secret info |
| IPSec Tunnels, Unclass info |
| Unencrypted Unclass info |

SIPRNet

B1OR

**NMCI NOC**
S
U

MCTN

COINS

OSSR

**IT-21 NOC**
S

ADNS

Remote
Unclass
Dial In

NMCI Transport Services
(COINS and vBNS+)

UUNet

NIF

vBNS+

**NMCI NOC**
S

B2

TFWeb/CAS

BGP4

NIF

U

B2

TFWeb/CAS

OSSR

U

B1OR

Backup

**The Fleet**

Internet

NIPRNet

NIPRNET and Internet
(redistributed via COINS and vBNS+ from NOCs)

# ALL ABOARD

- *IT-21 – NMCI -  BLII*

- *Navy ship deployments  -  Staff Embarkation*

- *Supporting Communications Technologies*

- *Dual Routing*

- *Limiting Factors - Bandwidth*

# Naval Network Challenges to Integration

- **Naval Networks and NMCI environments are based on different requirements and, therefore, different "rulesets"**
  - Naval Networks is a Tactical Network needed 24/7 online all-the-time anywhere
  - NMCI locks down workstations; Naval Networks do not
    - Shipboard administrators are allowed to fully administer network locally
  - NMCI is typically 1-2 users per computer; Naval Networks is typically many users per computer
    - Results in different security measures employed; different methodology for file storage employed
  - Shipboard environment has limited bandwidth on/off ship
- **Different environments result in some challenges for users when they cross domains between NMCI/Naval Network. Particularly in areas of:**
  - Embarkable users going from shore-to-ship-to-shore
  - Identity Management

# Embarkable Challenges

- ***Anti-virus Services***
  - *Currently have no way to automatically update NMCI embarkable clients in shipboard environment – Unit ITs must use manual process*

- ***User and Organizational Data Migration***
  - *Storage locations and methodology different in each environment*
  - *Use of Network Attached Storage (NAS) devices*

- ***Services:  Proxy Client, MS Outlook Client/MS Exchange Connector, Web browser, IP Addressing/DNS Routing***

1

# Embarkable Challenges
## (cont'd)

- ***Deployed Environment Applications***
  - *Any applications installed shipboard must be deleted prior to re-entering NMCI domain to avoid MAC*
- ***File and Print Services***
  - *Updating/Installing drivers*
- ***Data Reach Back***
  - *Very limited capability shipboard due to bandwidth restrictions*
- ***Other Security Issues***
  - *Deletion of profiles cached in ship domain deleted upon return to NMCI*
- ***BOTTOM LINE***
  - *We've now put an additional burden on shipboard and Unit IT administrators to accommodate the different environments. We are making some headway here (e.g., Airing Embarkable Servers) but this does not solve all problems for everyone.*

1

# Identity Management & NGDS

- *A plan has been developed for the "federation of Identities between the NGDS and NMCI Directories*

- *Challenges to this plan include:*
  - *Complex Business Rules:  The sharing of Identity Data requires extensive design and development to ensure that data accountability and ownership are preserved, while meeting needs of both NMCI and non-NMCI communities (entire DON)*
  - *Security Boundaries:   Requires cross-domain solutions that currently have various security policies and multiple DAAs*
  - *Requirement Validation:  The enterprise solutions needed are widely acknowledged and relied upon by many users but are not appropriately resourced*

# Testing

- *NMCI and Naval Networks both have a test process that must be followed to ensure application compatibility*
    - *Some of these procedures may be duplicative*
- *There is a need to share test procedures and test data to eliminate any test duplication*

# BLII Challenges to Integration

- – *Transitioning domain*
- – *BLII embarkables interfacing with NMCI embarkables*
- – *Identity Management*